# Tool 22
# Management Profile Sheets

This tool contains a series of fact sheets on management products that help agencies, partners and stakeholders make key restoration decisions by managing people, partnerships and resources toward common goals. The information provided within this tool is an excerpt from the Center for Watershed Protection's Methods to Develop Restoration Plans for Small Urban Watersheds.

| M-1 | Management Methods to Get to Restoration Decisions<br>**Finalize Watershed Goals** | FWG |
|---|---|---|

## Restoration Decision

The key decision is to agree on clear and measurable goals and objectives to guide the watershed restoration process and select the corresponding indicators that will be used to measure progress toward achieving them.

| Scale | Value |
|---|---|
| Watershed-wide | Essential |

## Management Method

Four tasks needed to finalize watershed goals are:

1. Educate stakeholders on the basics of watershed restoration
2. Define meaning of watershed goals, objectives and indicators
3. Work through a facilitated process to refine them
4. Decide how goals will be formally adopted

## Product or Instrument

Restoration goals are best formalized through a watershed agreement, memorandum of understanding, interagency directive or consensus statement that clearly articulates restoration goals and the local commitment to achieve them. The final product articulating the goals, objectives and indicators is typically only two to 10 pages long.

## Intended Audience

Broad dissemination of watershed goals and objectives is an extremely important tool to educate the full range of watershed stakeholders and the general public. Some effective techniques to deliver and publicize the agreement are press releases, signing ceremonies, watershed events, web sites, and brochures.

## Time Frame / Level of Effort

Given the large number of parties that must understand and support the agreement, it can take several months to complete this task. The required staff effort ranges from two to six weeks to draft the agreement, conduct meetings, respond to comments, and navigate it through the system. As a rule of thumb, plan on one week of staff effort per signatory of the agreement, and triple everything if more than one jurisdiction is involved.

## Decision-making Process

The lead watershed agency usually drafts an initial “strawman” document describing general ideas for goals, objectives and indicator goals. The strawman is synthesized from the needs and capabilities assessment (NCA), existing data analysis (EDA) and stakeholder consensus process produced earlier in this step. Once the draft is prepared, it is then circulated to agencies and municipal or regional stakeholders for review and comment.

## Tips for Setting Watershed Goals and Objectives

- A frequent barrier to consensus is real or perceived concerns among some parties that they are being obligated to spend money in the future or over an unrealistic timeframe. To avoid these perceptions, initial goals should not contain explicit financial commitments. Financial commitments can be added later in the process when the true price tag for restoration is known, partnerships are better established, and the joint funding strategies are accepted.

| M-1 | Management Methods to Get to Restoration Decisions<br>**Finalize Watershed Goals** | FWG |
|---|---|---|

## Tips for Setting Watershed Goals and Objectives

- Given all the hard work it takes to achieve consensus on goals, make sure they are prominently featured in all websites, reports and other products during the remainder of the restoration process.
- The restoration team should strive to have balance in the proposed goals for restoration. A few examples should be selected from each of the four goal categories: physical, water quality, biological and community.
- At the same time, stakeholders should resist the temptation to add too many goals to the list. A good rule of thumb is to keep the total number of watershed goals to about a half dozen or so. If there are still too many, ask stakeholders to vote on their most important priorities, and consider lumping a few together.
- Stakeholders should make sure to give their goals a "reality check" to make sure they are truly achievable and realistic. In particular, they should check to make sure the goals are consistent with the amount of impervious cover in the watershed now or in the future.
- Goals should always be listed in priority order.
- Sometimes it is helpful to get stakeholders to sharpen their goals by asking them what specific indicator they would use to measure the goal. Good indicators are directly linked to goals and should be a tangible measure of aquatic or community health.

## Real World Example

Cobbs Creek is a 22 square mile urban watershed in the City of Philadelphia that suffers from storm water and combined sewer overflow problems. The watershed has almost 50% impervious cover, is home to more than 135,000 residents, and contains extensive open space and recreational users. The Office of Watersheds of the City of Philadelphia Water Department completed an extensive subwatershed plan to implement more than $200 million of restoration practices over the next 20 years to achieve three progressively more ambitious goals. The first goal was to improve dry-weather water quality and aesthetics in the stream corridor, the second goal was to restore healthy living resources in the stream and the last goal was to improve the water quality and flooding during wet-weather conditions. More than a dozen different indicators were selected to track progress toward each goal during the 20-year period to implement all the restoration practices. The indicators and stakeholder weighting are shown on the next page. Monitoring is expected to maintain public interest and allow the plan to be adapted over time to improve the performance and cost-effective delivery of restoration projects (CPWD, 2004).

M-1

## Management Methods to Get to Restoration Decisions
## Finalize Watershed Goals

FWG

### Real World Example

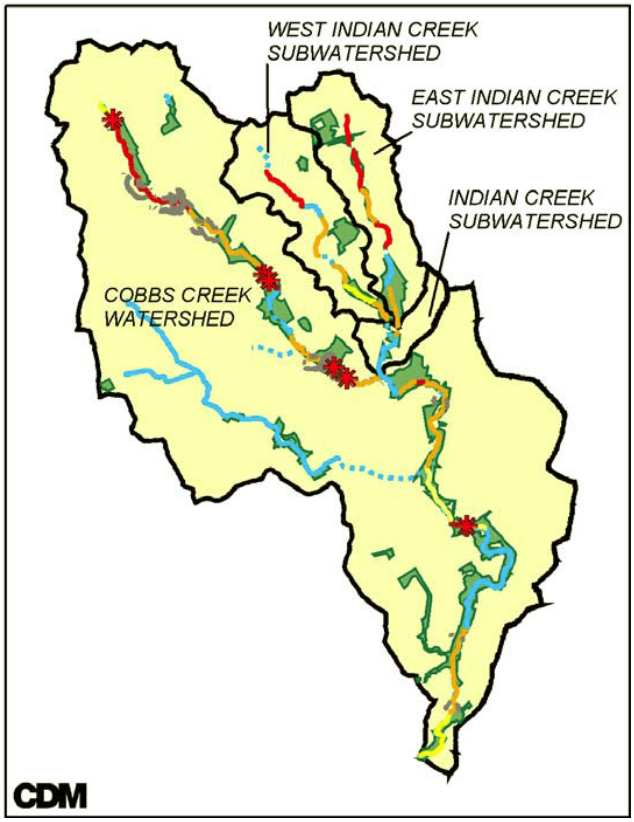



**Table 3-1: Stakeholder Priorities as Weights for Goals**

| | |
|---|---|
| **Streamflow and Living Resources**. Reduce the impact of urbanized flow on the living resources (increase baseflow and recharge, reduce impervious area and runoff peaks, improve stormwater ordinances). | 12 |
| **Stream Habitat and Aquatic Life**. Improve stream habitat and indices of aquatic integrity (improve physical habitat, benthic, fish, algae). | 9 |
| **Stream Channels and Banks**. Reduce streambank and stream channel deposition and scour to protect and restore the natural functions of aquatic habitat and ecosystems, streambanks, and stream channels (increase stabilized areas, reduce frequency of bankfull flow). | 7 |
| **Flooding**. Decrease flooding (improve stormwater management, trouble spots, inlet cleaning, floodplain management and structures). | 11 |
| **Water Quality**. Improve dry and wet weather stream quality (meet designated uses, prevent fish advisories). | 9 |
| **Pollutant Loads**. Decrease pollutant loads to surface waters (decrease runoff, SSO, septic tank, CSO, and debris loads). | 10 |
| **Stream Corridors**. Protect and restore stream corridors, buffers, floodplains, and natural habitats including wetlands. | 11 |
| **Quality of Life**. Enhance community environmental quality of life (protect open space, access and recreation, security, aesthetics, historical/cultural resources). | 12 |
| **Stewardship**. Foster community stewardship (increase awareness and responsibility, volunteer programs, education). | 11 |
| **Coordination**. Improve inter-municipal, inter-county, state-local, and stakeholder cooperation and coordination on a watershed basis. | 8 |

*Stakeholders developed key watershed goals and weighted their importance in this Philadelphia watershed, which helped determine where to start first.*

Source: Philadelphia Water Department (CPWD), 2004

| M-2 | Management Methods to Get to Restoration Decisions<br>**Priority Subwatershed List** | PSL |
|---|---|---|

## Restoration Decision

To agree on which subwatershed or group of subwatersheds to begin working on first, and devise a longer-range schedule to assess restoration needs in all subwatersheds.

| Scale | Value |
|---|---|
| Watershed- or Community-wide | Helpful |

## Management Method

The priority subwatershed list is compiled by performing four tasks:

1. Review initial subwatershed rankings from CSA
2. Revise list based on stakeholder input
3. Scope out schedule and budget for priority subwatersheds
4. Develop a longer-range plan to assess all subwatersheds

## Product or Instrument

1. A short report that supports the choice of priority subwatersheds, documents key assumptions used in the CSA, and depicts their locations on a simple watershed map
2. A scope of work that outlines the desktop analysis, field assessment and stakeholder involvement methods needed to prepare restoration plans for priority subwatersheds, accompanied by a budget and schedule

## Intended Audience

The draft priority subwatershed list and map should be distributed to the full range of watershed stakeholders.

## Time Frame / Level of Effort

The priority list can take as little as a month to complete if there are no major technical or political disputes about the ranking process. The required staff effort is about two weeks to assemble the memo, solicit stakeholder input and respond to comments. The timeframe to put together a priority subwatershed list will be extended by six months or more if an RBA is needed to support the decision.

## Decision-making Process

Subwatersheds are prioritized by the lead watershed agency. The priority list is then circulated to local agencies and other stakeholders for review and comment. The lead watershed agency usually approves the final priority list, and commits funding for subsequent phases of subwatershed assessment.

## Tips for Developing a Priority Subwatershed List

- A priority subwatershed list is attractive to many agency and elected stakeholders that are unfamiliar with restoration, since it limits their future budget liability. The basic idea is to "practice" in a few subwatersheds to acquire experience on restoration methods, costs and results. Future restoration work in other subwatersheds can then be adapted to reflect the lessons learned.

| M-2 | Management Methods to Get to Restoration Decisions<br>**Priority Subwatershed List** | PSL |
|---|---|---|

## Tips for Developing a Priority Subwatershed List

- Some stakeholders may question why restoration efforts are being deferred in their favorite subwatershed, if it doesn't make the final cut. A long-range plan to assess restoration potential in all subwatersheds may help counter this concern. It should be stressed that low-priority subwatersheds are not being sacrificed, and will be addressed in the future.

- Stakeholders often have a hard time deciding whether priority should be placed on the subwatersheds in the worst shape or the ones with the greatest restoration potential. The choice is never easy, and may require more restoration education and outreach among stakeholders.

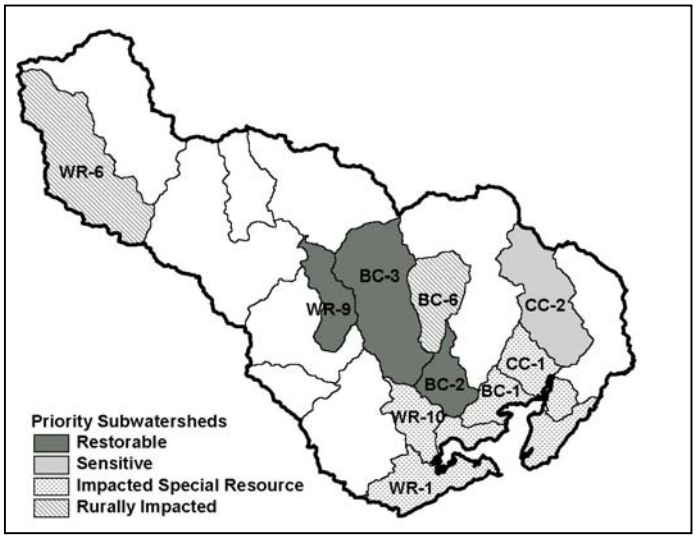
- The priority list should not be solely viewed as a technical analysis. Community interest and concern are extremely important in successful restoration, so make sure to weight these factors heavily. Stakeholders are a great resource for "measuring" non-technical subwatershed metrics and providing insights on how they should be weighted.

- An agreement on priority subwatersheds is always a newsworthy event, and yet another opportunity for restoration education and outreach.

- Watershed web sites or fact sheets with simple maps and graphics are an excellent way to publicize priority subwatersheds.

## Real World Example

The Bush River watershed provides a good example of the subwatershed screening process. Located in the northeastern corner of Maryland, the watershed is 117 square miles and contains 19 subwatersheds (Winer, 2003). Given its size, watershed managers wanted to choose priority subwatersheds for early action. Abundant GIS data was already available to conduct a comparative subwatershed analysis (CSA). Numerous stream corridor and upland screening factors were chosen for the CSA spreadsheet, with the weight for each factor decided by watershed stakeholders. In a relatively short time, 10 subwatersheds were chosen for initial action. This CSA was not only used to identify restorable watersheds and those most vulnerable to future development, but it identified special resource areas for added protection and even rural areas that required attention.




*Map of priority subwatersheds in the Bush River Watershed*
*Source: Winer, 2003*

| M-3 | Management Methods to Get to Restoration Decisions<br>**Initial Subwatershed Strategy** | ISS |
|---|---|---|

## Restoration Decision

The key restoration decision is to agree on an initial restoration strategy that outlines which combination of candidate project investigations to be pursued in Step 4.

| Scale | Value |
|---|---|
| Subwatershed-wide | Essential |

## Management Method

Four tasks are needed to develop an Initial Subwatershed Strategy:

1. Review priority restoration elements from DSA
2. Engage core team in brainstorming meeting
3. Decide on the type and number of CPIs needed
4. Develop a detailed scope of work and budget

## Product or Instrument

The final product is a detailed work plan to investigate restoration practices within the subwatershed. The work plan outlines the type, number and locations of restoration practices that will be investigated, and guides the efforts of the core team to assess, design and implement individual restoration practices.

## Intended Audience

Once the strategy memo has been completed, it is good practice to distribute it to subwatershed stakeholders, local agencies, and interested parties. Effective outreach techniques include creating a project website, sending the strategy memo electronically, or providing hard copies upon request.

## Time Frame / Level of Effort

The initial strategy takes about two weeks to complete, assuming the other supporting methods in Step 3 have already been completed.

## Decision-making Process

The strategy memo is primarily an internal document, although it may be worth sharing with key stakeholders (particularly land management agencies). Normally, the ISS is derived from technical data obtained during the DSA, USA and USSR surveys and SIR. The strategy and scope of work are approved by the lead watershed agency/group, and are subject to normal budgetary constraints.

## Further Resources

Figures 25 and 26 (Chapter 4 of Manual 1) provide helpful guidance on how impervious cover influences subwatershed restoration strategies. Chapter 9 of this manual should be consulted for unit costs to help create the scope of work and budget for subsequent phases.

## Tips for Crafting an Effective Initial Subwatershed Strategy

- The best way to hash out an initial restoration strategy is to engage in a series of brainstorming sessions with the core team to analyze desktop analysis, field assessment and stakeholder management data produced to date. It may be helpful to bring other stakeholders to these sessions to add an outside perspective.

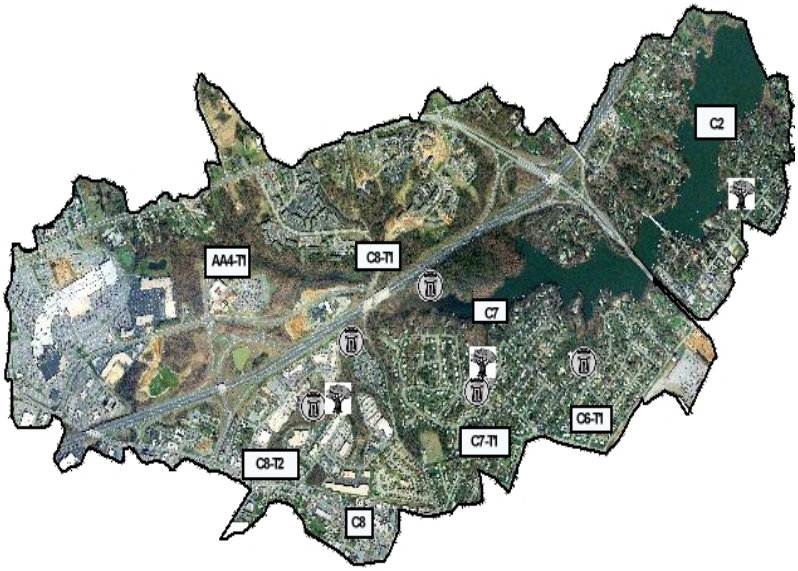
| M-3 | Management Methods to Get to Restoration Decisions<br>**Initial Subwatershed Strategy** | ISS |
|---|---|---|

## Tips for Crafting an Effective Initial Subwatershed Strategy

- Start the sessions by reminding the team about the watershed restoration goals that are guiding the effort.
- Look at simple counts of the number of each kind of restoration practice to determine which are most widespread or numerous in the stream corridor and upland areas. Check to see if practices are clustered in certain neighborhoods, areas or stream reaches. If possible, visually estimate the total area or length that the restoration practices could potentially treat in the subwatershed. Try to narrow down the number and type of restoration practices that need to be investigated.
- This is one of the big money steps in subwatershed planning since many of the candidate project investigations considered can be quite expensive to perform, particularly if there a lot of them.
- The scope of work will always be constrained by available budget, and the core team will always face hard choices on what tasks to include and exclude from the next steps of subwatershed planning. Carefully analyze each task to see if it is more sophisticated or expensive than is actually needed. One useful trick is to allocate time during a stakeholder meeting to practice subwatershed budgeting in a small group setting.
- Remember, that just as some dogs don't hunt, some subwatersheds just don't work out. They may simply not have enough potential locations for restoration practices to make enough of a difference. Don't get discouraged -- there is usually a better subwatershed out there.

## Real World Example

Weems Creek is a small coastal plain watershed located near Annapolis, Maryland. Concerns about declining water quality and habitat in its tidal coves prompted a strong local effort to restore this watershed. A comprehensive strategy was lacking until detailed subwatershed and stream corridor assessments were undertaken, and an intensive effort was made to involve the public. This broad restoration strategy enabled watershed partners to agree on a common framework for more detailed restoration investigations (Sturm, 2002).



| M-4 | Management Methods to Get to Restoration Decisions<br>**Inventory of Restoration Opportunities** | IRO |
|---|---|---|

## Restoration Decision

The decision in Step 4 is to identify the combination of feasible restoration projects in the subwatershed that can achieve overall watershed restoration goals. All feasible restoration projects are assembled into a single binder/document so that their cumulative effect on treatment can be assessed at the subwatershed level.

| Scale | Value |
|---|---|
| Subwatershed-wide | Essential |

## Management Method

Two tasks are required to complete an Inventory of Restoration Opportunities:

1. Assemble project concept designs into master binder or GIS
2. Produce subwatershed project locator map and inventory summary table

## Product or Instrument

The typical product is a detailed report known as a subwatershed restoration inventory, which is usually 40 to 60 pages long, with appendices showing individual restoration project assessment sheets and maps.

## Intended Audience

The full inventory is primarily used by the core restoration team as a planning reference, but summary tables and maps are often shared with subwatershed stakeholders and restoration partners.

## Time Frame / Level of Effort

The inventory can usually be assembled in about two weeks of staff time, assuming other tasks are completed.

## Decision-making Process

The draft inventory is usually prepared by the lead watershed agency, and is then circulated for review and comment by subwatershed stakeholders. The subwatershed restoration inventory is normally compiled from the individual project concept designs developed after candidate project investigations and initial subwatershed stakeholder meetings.

## Tips for Putting Together a Restoration Inventory

- An interdisciplinary team should compile the inventory since it requires knowledge about many diverse groups of restoration practices.
- The inventory should be divided into sections for each of the seven major groups of restoration practices, and summary tables should be prepared to track project counts within each section.
- The subwatershed map should not only show the location of each project but the approximate area that it treats.
- Subwatershed location is important. Look for synergies among different kinds of restoration practices in the same area (e.g., upstream retrofit above stream repair project also associated with riparian reforestation project).

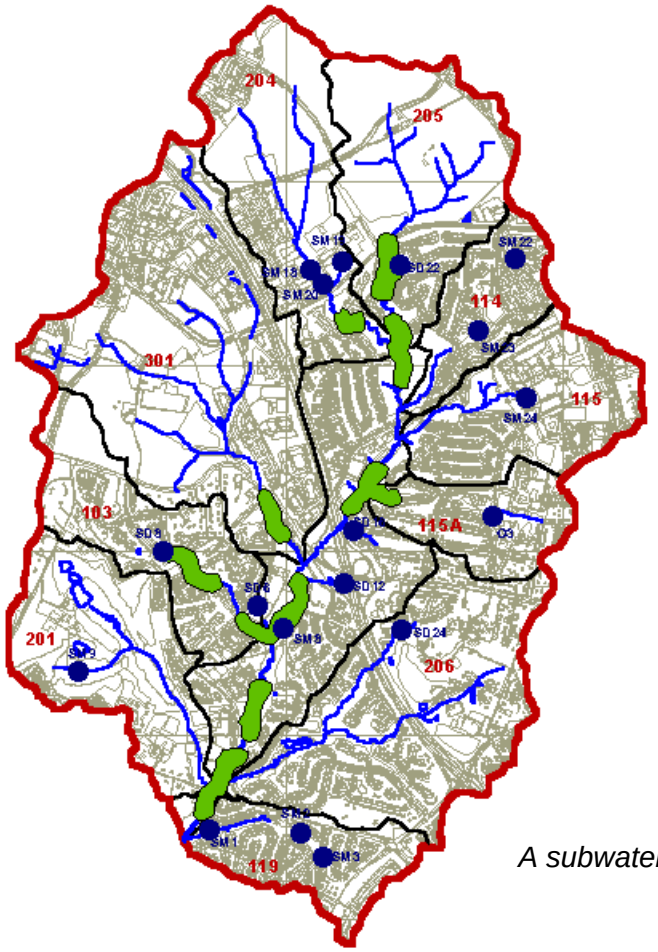
| M-4 | Management Methods to Get to Restoration Decisions<br>**Inventory of Restoration Opportunities** | IRO |
|---|---|---|

## Tips for Putting Together a Restoration Inventory

- Comparative tables on project cost, area treated, pollutants reduced and relative feasibility are extremely helpful in sorting out the most effective projects to consider in the subwatershed plan.
- Keep in mind that ALL potential restoration projects should be included in the inventory, even if they do not currently appear to be feasible or cost-effective. They may ultimately be needed if more treatment is needed to meet subwatershed goals.

## Real World Example

Watts Branch is a small watershed located in suburban Maryland, where an extensive subwatershed restoration inventory was completed. Initially, more than 70 feasible projects were identified in the subwatershed. Stakeholders were actively involved throughout the inventory process, which helped to make a final list of 23 projects acceptable to all parties (Brown and Claytor, 2001). The map below shows the final locations of restoration projects in the watershed.




*A subwatershed locator map helps organize the retrofit inventory*

| M-5 | Management Methods to Get to Restoration Decisions<br>**Draft Subwatershed Plan** | DSP |
|---|---|---|

## Restoration Decision

Agree on a short and concise subwatershed plan that recommends restoration projects and programs and outlines the budget, phasing, responsible parties and funding strategy needed for implementation. The plan is usually no more than 20 to 40 pages long, with a table of key project recommendations and a subwatershed map showing their locations.

| Scale | Value |
|---|---|
| Subwatershed-wide | Essential |

## Management Method

Five basic tasks are involved in writing an effective subwatershed plan:

1. Draft an outline for the plan
2. Define subwatershed objectives
3. Identify early action commitments
4. Develop project implementation matrix
5. Prepare technical appendices supporting the plan

## Product or Instrument

The product is a draft subwatershed restoration plan prepared by the lead watershed agency. The draft plan is synthesized from the project evaluation and ranking (PER) and neighborhood consultation meetings (NCM).

## Intended Audience

The draft plan is normally circulated to partners and stakeholders for external review and comment (see Profile Sheet M-6). A condensed summary of the plan and map can also be posted on the project website.

## Time Frame

A short plan can be written using two to three weeks of staff time scheduled over a two-month time period if there are no technical problems.

## Decision-making Process

The draft subwatershed plan undergoes several more checks before it is ready to be finally adopted. Steps 6 and 7 focus on subwatershed treatment analysis, external plan review, creation of restoration partnerships and an implementation strategy that can effectively navigate the draft plan through the local political, budget and agency landscape.

## Tips for Drafting the Plan

- Before getting started, take some time to review the original watershed goals and objectives that are driving the restoration process and make sure the subwatershed plan is consistent with them.
- The draft plan is no time to be cautious about implementation. The plan should show how all the priority restoration projects will be completed within a maximum of five to seven year period. Individual projects should be phased to implement the ones that provide the maximum initial subwatershed or stream corridor treatment.

| M-5 | Management Methods to Get to Restoration Decisions<br>**Draft Subwatershed Plan** | DSP |
|---|---|---|

## Tips for Drafting the Plan

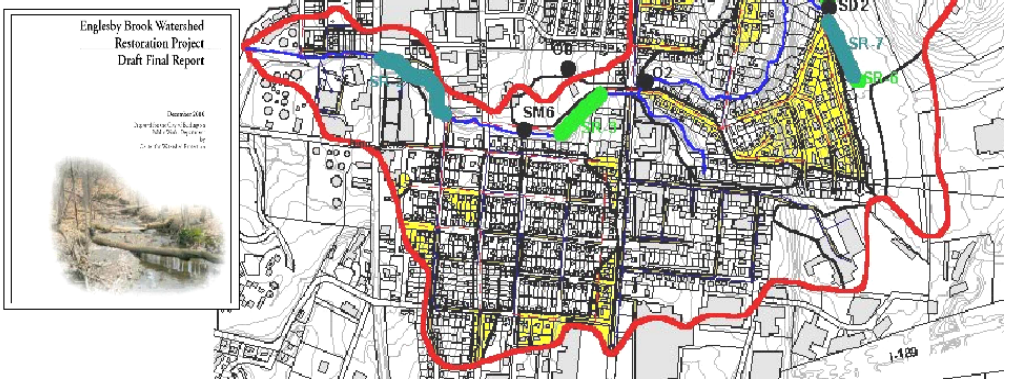
- Try to think through everyone who will play a role in the actual implementation of individual restoration projects, and make sure they fully understand the permitting, landowner approval, and maintenance responsibilities set forth in the plan.

- Be creative and assign restoration partners multiple responsibilities for action in the plan, whether they are other local agencies, watershed groups, funding sources, or state resource agencies and others. The key to creating a strong restoration partnership is shared action, and the draft plan is a good opportunity to share what some of these actions might be.

## Real World Example

Englesby Brook is a very small urban watershed that drains to Lake Champlain near Burlington, Vermont. Storm water runoff from the subwatershed had earlier been identified as the cause of the closure of a popular swimming beach. A draft subwatershed plan was developed to identify key restoration projects and costs, and was used by stakeholders to define the final implementation strategy to correct the problem through a combination of storm water retrofits and source control efforts (Claytor *et al.*, 2001).

| Keystone Recommendations for Implementation | Justification |
|---|---|
| Stormwater retrofit: O8 | Provides the greatest pollutant load reduction of any proposed retrofit and represents one of the few areas where management of the runoff from this drainage area can occur. Site is located on public land which may ease approval process. |
| Stormwater retrofit: SM5 and SD2<br>Stream rehabilitation: SR6, SR7, and SR8 | Combines stream rehabilitation with upstream retrofits to reduce sediment and nutrient load generated at and upstream of the golf course. Consolidates construction disturbances. |
| Pet waste management and lawn care education | Together provide the most cost effective form of pollution prevention for nutrient and bacteria loads. |
| Illicit connection detection and removal | This is a critical pollution prevention effort that directly relates to whether Blanchard Beach will reopen and specifically addresses dry weather loads that may impair the beach. |



| M-6 | Management Methods to Get to Restoration Decisions<br>**Subwatershed Implementation Strategy** | SIS |
|---|---|---|

## Purpose

The purpose of this step is to put together a strategy to get the plan adopted, funded and implemented over time. The restoration team needs to think through how they will navigate the plan through the local political and budgetary process and persuade key members of the community to support the action.

| Scale | Value |
|---|---|
| Community-wide | Essential |

## Management Method

Six tasks are needed to develop the Subwatershed Implementation Strategy:

1. Investigate funding available for implementation
2. Schedule realistic implementation time frame
3. Establish restoration partnership structure
4. Decide on early action commitments
5. Determine minimum local budget needs
6. Learn the local budget process and begin briefings

## Product or Instrument

The initial products are presentations describing the subwatershed improvements expected from the plan that are targeted to the interests of local decision-makers.

## Intended Audience

Once the subwatershed evaluation has been finalized, an organized campaign commences to present that case to the influential members of the community that can make it happen, such as elected officials, regulators, local media, state and federal funding sources, and the activist public.

## Time Frame / Level of Effort

The required staff effort can range from a few weeks to several months. Obviously, the time frame will need to be extended if the Subwatershed Treatment Analysis (STA) suggests that the plan must be revised or expanded to meet watershed restoration goals.

## Decision-making Process

The final implementation strategy is derived from the STA (D-6) and External Plan Review (S-6). The lead watershed agency or group normally performs the analysis, and then circulates it to appropriate stakeholders for technical review.

## Tips in Deriving Subwatershed Implementation Strategy

- This is a great time in the planning process to pause for a moment and think big, strategic and long term. It may have taken a year or more to get to this point, but you still have many years to go in terms of actual implementation. Start by revisiting the goals that are driving local restoration, since better decisions are always made when endpoints are clear and defined.
- A brief retreat is often an effective way to develop the strategy. The core team, key partners, budget experts, senior agency heads and elected official staff should be invited to chart a common course of action, as well as some outside advisors to bring fresh perspectives.

| M-6 | Management Methods to Get to Restoration Decisions<br>**Subwatershed Implementation Strategy** | SIS |
|---|---|---|

## Tips in Deriving Subwatershed Implementation Strategy

- One of the most critical "to do" items in the strategy is to determine who will perform the remaining steps of the restoration process in the coming years. More likely than not, these important tasks were not fully budgeted or scoped in the original restoration planning effort.

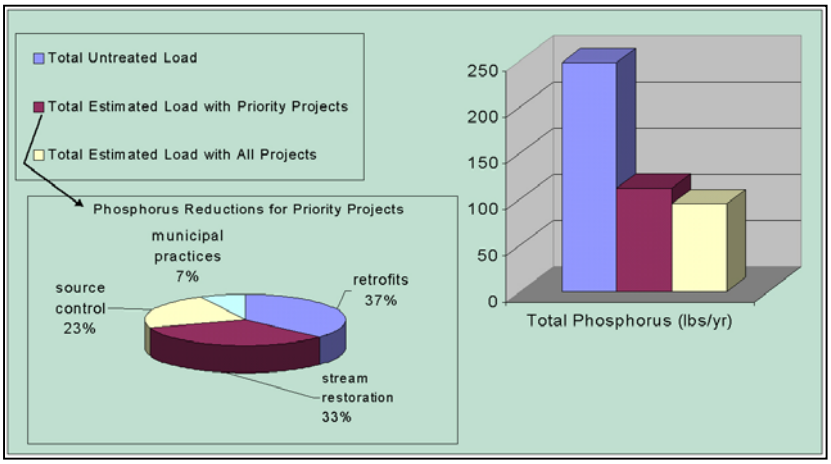
- The strategy should focus on how to pay for the delivery of multiple restoration projects in a relatively short time period. The future costs and staff effort needed to perform final design, permitting, construction, project management, monitoring, coordination and ongoing management will normally far exceed what has been spent so far on restoration planning. The strategy should designate who will perform each task, and carefully estimate how much it will cost. Guidance on scoping, budgeting and phasing the final steps in restoration implementation is provided in Chapter 9.

- Long-range thinking is good, but the strategy should also identify the early action restoration projects that can be installed in a year's time. Early action projects are low cost restoration projects that are easy to design and permit, and can demonstrate early results on the ground. Good early action projects include reforestation, stream cleanups, residential stewardship, illicit discharge detection, and some fish barrier removals.

- Lastly, the core team should think about how it will market the restoration effort and build a persuasive case for why it is needed and the benefits it will provide. At some point in the near future, the core team will be asked tough questions to justify the considerable community investment in restoration—and it pays to anticipate these tough questions in advance and be prepared with an effective response.

## Real World Example

Englesby Brook is a good example of how to evaluate subwatershed treatment. Local managers wanted to make sure that the recommended combination of restoration projects would help solve their water quality problems, yet they did not have the resources to support sophisticated watershed modeling. The Watershed Treatment Model (WTM) was used to evaluate the expected pollutant reduction that could be achieved by the draft plan. As shown in the graph below, the results of the WTM indicated that the plan could sharply reduce phosphorus loads (Claytor *et al.*, 2001).



| M-7 | Management Methods to Get to Restoration Decisions<br>**Adopt Final Plan** | AFP |
|---|---|---|

## Restoration Decision

Agree on the final details of subwatershed restoration implementation and get local elected officials to endorse the plan and appropriate short and long-term funds for implementation

| Scale | Value |
|---|---|
| Community-wide | Essential |

## Management Method

Four tasks are involved in getting the final plan adopted:

1. Decide which plan elements require adoption
2. Convert plan elements into legislative and budgetary language
3. Make persuasive case about restoration benefits
4. Navigate the appropriate approval pathway

## Product or Instrument

There are many instruments that can be used to adopt a plan, including formal votes, dedicated long term capital budgets, passing a line item in an agency operating budget, authorizing cost-sharing or grants, or similar actions.

## Intended Audience

The formal adoption of a restoration plan is a superb opportunity for effective watershed outreach. Good watershed managers recognize this fact, and widely announce the agreement through the media, press releases, ribbon cuttings, photo opportunities, presentations, and other public relation tools. All publicity should liberally dispense credit, recognition and thanks to the elected officials and stakeholders that made it happen.

## Time Frame Level of Effort

This method can take as little as a month of staff effort to complete if there are no major surprises or unforeseen costs encountered in the final design process. However, the actual time-frame to adopt the plan is often much longer, given the crowded schedules of elected officials and timing of local budget processes.

## Decision-making Process

The final plan is developed based on final project costs and external review and normally requires formal approval by elected officials and other responsible parties.

## Tips for Getting the Plan Adopted

- The political landscape and budgetary situation is different in every community, but it is surprising how many restoration plans are developed with little regard to either important factor. Quite simply, a good plan submitted at a bad time may not be adopted.

| M-7 | Management Methods to Get to Restoration Decisions<br>**Adopt Final Plan** | AFP |
|---|---|---|

- At this stage, the core team should make sure they know which way the political and budgetary winds blow, by getting good answers to the following questions:

  - When is the next election cycle in the community?
  - How tight are local budgets expected to be in the next few years?
  - How favorably disposed are elected officials to restoration issues?
  - Is more education needed to get them up to speed?
  - What key issues will motivate them to support restoration (community support, environmental concern, regulatory compliance, etc.)
  - What issues might introduce barriers to additional spending? (budget shortfalls, concern about new spending, competing priorities, etc.)
  - How much lead time is needed to get restoration projects inserted into local operating and capital budgets?
  - Who are the key staff that make budget decisions and when is the right time and the right way to approach them?
  - Are there any existing budget accounts or line items where funds can be added to support restoration?

- It is a good idea to try to shift funding toward capital budgets or some other dedicated funding source, which can provide funding over multiple years, and decrease reliance on operating budgets and grants (which seldom can be obligated for more than a year, and can disappear quickly during a budget crunch).

- The real trick in getting a plan adopted is to gauge what elements to pull out of the plan to recommend for adoption, and how much and how many years of actual budget commitment can be realistically expected in the current political landscape. In many cases, it may require many votes over many months or years to get the entire restoration budget authorized.

- While it may be a good idea to ask for a vote to endorse the plan as a whole, a short "adoption" document should be prepared that summarizes the recommended actions at the current point in time. The adoption document should be no longer than a half-dozen pages at most, and contain a matrix of key recommendations, including the specifics of who, what, when, where and how much will it cost to implement them.

- The adoption document should always emphasize any recommendations that are low or no cost recommendations, such as early action projects or changes that can be implemented administratively or through changes in municipal operations.

- The adoption document should also reaffirm the goals of the restoration effort and recognize all key partners involved in implementation.

| M-7 | Management Methods to Get to Restoration Decisions<br>**Adopt Final Plan** | AFP |
|---|---|---|

## Real World Example

The City of Rockville, MD is an excellent example of a proactive approach to financing the implementation of a subwatershed plan. The purpose of the Watershed Management Program is to make the city's stream corridors environmentally stable and enjoyable for residents, and to reduce nonpoint source to the Potomac River and the Chesapeake Bay. The City's dedicated storm water management fund makes the watershed management program self-supporting. Money is primarily collected from fee-in-lieu contributions for storm water management and storm water management and sediment control permit fees. These funds cover design and construction of public facilities and stream restoration, watershed studies, and other restoration programs. The table below presents the capital improvement projects implementation schedule for priority restoration sites that were identified in the City's Watts Branch Management Plan (Brown and Claytor *et al*., 2001). Over a 10-year period, the City plans to spend more than $2.7 million on the restoration of Watts Branch.

**Watts Branch Watershed Study Projects Proposed CIP Implementation Schedule – Fiscal Years 2002-2012**

| WATTS BRANCH PROJECTS | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| SM18 & SM20 (270 Industrial Park & Carnation Drive Ponds) & 204-5 | *$81,000* | | $259,000 | | | | | | | |
| 205-1 to 2, 204-1, 302-12; 205-5 to 8 (Upper Watts Br. Park Streamwork) | | | | | *$80,000* | | $256,800 | | | |
| SM23 (College Gardens Park Pond) | | | *$50,000* | | $198,000 | | | | | |
| O3 (Welsh Park Pond) | | | | *$40,000* | | $133,000 | | | | |
| 302-3 to 4, 302-6, 302-8; 115A-1 to 3 (Woodley Gardens Park Streamwork) | | | *$70,000* | | $193,000 | | | | | |
| 401-15 to 18, 103-1 to 2 (Woottons Mill Park-Upper Streamwork) | *$60,000* | | $166,000 | | | | | | | |
| 401-8 to 11(Woottons Mill Park-Rockshire Streamwork) | | *$40,000* | | $110,000 | | | | | | |
| 401-2 to 3, 401-5 to 6 (Woottons Mill Park-Lower Streamwork) | | | | | | | | | *$40,000* | |
| SM1, SM2 & SM3 (Horizon Hill Park Ponds) | | | | | *$88,000* | | $293,000 | | | |
| SM9 (Lakewood Country Club Pond) | | | | | | | | | *$10,000* | |

| M-8 | Management Methods to Get to Restoration Decisions<br>**Adapt Subwatershed Plan** | ASP |
|---|---|---|

## Restoration Decision

The key decision is whether the plan needs to be adapted over time to respond to ongoing monitoring data, project experience and unforeseen financial opportunities. While it is impossible to anticipate the future, it is important to create an adaptive management process to oversee plan implementation.

| Scale | Value |
|---|---|
| Subwatershed-wide | Helpful |

## Management Method

Four tasks are needed to adapt subwatershed plans:

1. Reconvene stakeholders once a year
2. Evaluate long-term trends in aquatic indicators
3. Assess the first round of implementation projects
4. Revise or expand restoration goals

## Product or Instrument

The ongoing management structure (OMS) periodically produces annual reports, special monitoring studies, project progress reports, newsletters, or progress meetings to document progress made in plan implementation and stream indicator response.

## Intended Audience

The OMS is the key player to keep the full range of all stakeholders informed about progress made in restoration. They are also ideally positioned to quickly respond to new funding opportunities to enhance the restoration plan.

## Time Frame

The typical time frame for the first round of implementation is typically five years or longer. The original plan should be revisited every five to seven years, and possibly revised to account for indicator trends, project experience and other factors.

## Decision-making Process

Adaptive management is triggered by the results of project tracking and sentinel or performance monitoring, and presumes the existence of an ongoing management structure that can make the appropriate changes to the plan when the time comes.

## Tips for Sustaining Progress

- Communities often experience great difficulty in sustaining restoration efforts over the long run, given the inevitable budget shortfalls, staffing changes, election cycles and competing environmental priorities that emerge. This underscores the pivotal importance of an ongoing management structure that can advocate for the plan during these difficult times, and sustain progress toward restoration.

- The subwatershed plan should be flexible enough that the management structure can respond to unanticipated grant opportunities, new partners, and innovative practices.

## Tips for Sustaining Progress

| M-8 | Management Methods to Get to Restoration Decisions<br>**Adapt Subwatershed Plan** | ASP |
|---|---|---|

- The management structure should get together at least once a year to strategically evaluate the restoration plan. Emphasis should be placed on how restoration projects can be delivered faster and more cheaply, how the restoration partnership can be expanded, and what new funding opportunities can be pursued.

## Real World Example

Located in central Delaware, the Appoquinimink River watershed drains agricultural areas, small historic towns, and new residential subdivisions before discharging into the Delaware Bay Estuary. As part of the State's Tributary Action Strategy program, local stakeholders developed a pollution control strategy (PCS) to help meet recent TMDLs for the Appoquinimink and its tributaries. Stream walks, storm water retrofit inventories, and hotspot and residential source control assessments were performed to identify specific restoration projects to be implemented per the PCS. An implementation plan was developed in 2005 that outlined specific project concepts, responsible parties, estimated costs, and a 5 year implementation horizon. The plan also recommended annual reporting and project tracking by the watershed coordinator (the OMS). The overall plan is to be reevaluated and updated by 2010 to make sure PCS goals are being met.